



Chambers's Journal

SIXTH SERIES.

HEALTH AND ILL-HEALTH IN INDIA.

By MRS MONTAGU TURNBULL.



WHEN speaking in the House of Commons on the 11th of March last year, Mr Chamberlain, alluding to malarious fever as the curse of the white man in tropical climates, thought that the terrific mortality on the West Coast of Africa might in great measure be prevented by proper treatment and good nursing, and these regions made 'at all events as healthy as Calcutta, where it was possible for Europeans to reside for long periods.'

Having, with my husband, the late General Turnbull, spent twenty-one happy years in 'the City of Palaces,' I venture upon a few words in defence of the climate by stating that during all those years not one case of malarious fever occurred there. The *danghy* fever in epidemic form visited Calcutta with every symptom of the influenza now in Europe; but, the climate being more favourable, no adults died of it, and only a very few children. The natives consider that every fifty years India is subject to the visitation, but do not fear it. One Hindu servant asked me, in a very quaint manner, for 'five days' leave to go and have the fever,' returning at the appointed time quite pleased at having had it strong.

It is true that the lamented Lady Canning—wife of the then reigning Viceroy—died in Calcutta of malarious fever. She did not, however, contract it there, but on the Darjeeling Hills, in a valley so unhealthy that the natives had deserted it; and, although warned of the danger, she spent a whole day there sketching the beautiful scenery, meantime inhaling the poison, and returned to Calcutta to die. Truly she was a woman '*sans peur et sans reproche*.'

I believe Calcutta to be as healthy as any part of England. Cholera, like the Wandering Jew, is everywhere at times; but we never had the 'deaths from all causes' more than twenty in the thousand, whereas in England it has lately been much larger.

'Lord Curzon considers going to Simla not in the light of a holiday resort; but without relief no Viceroy could stand the strain in the low-lying delta of Bengal, and the atmosphere of the hills was more conducive to mental and physical energy.' But the late Lord Canning spent more than one summer in Calcutta under the most trying circumstances conceivable, for he was there at the hottest season when the Indian Mutiny broke out, and yet retained both mental and physical energy. On the Queen's Birthday he gave the usual ball at Government House, his noble policy being to show a bold front. Both Lord and Lady Canning were cool and collected, and the ball was kept up with spirit.

I shall never forget that night. We, having the private *entrée*, walked up the stairs lined by the Native Bodyguard, and saw them standing at the doors of the private apartments in Government House. Lord Canning was advised to have them exchanged for a European guard, but refused, and slept that night and many others with the native soldiers fully armed standing at his door—men of the same creed as those in open mutiny all around.

The prejudice against Calcutta is unfounded, and people passing through remember only the disagreeables. Lately a retired officer of the Royal Navy, who had spent a few days there in his ship on the Hooghly, called upon me, and all he remembered was 'seeing the dead bodies of Hindus floating down the river.' My recollection was very different. I never saw what he described, but remember the fine trees and sweet-scented shrubs loading the air with perfume, and the fireflies playing round them at sunset. Indian society is sneered at by those knowing very little about it. In our time it was good, and enjoyed by many distinguished persons, and free from the *nouveaux riches*. Most of the best families over here were represented by younger sons and other relatives. Perhaps changes have occurred; but the climate is the same, and

I never felt it interfere with any occupation I had in view.

On returning from Calcutta to England I was surprised at the struggle kept up to retain health—people running after change of air, yet complaining of the changeable climate. I stay at home, and the change comes to me. The conversation, too, is much about health, and the fear of sitting in a draught; whereas in Calcutta we sat, and even slept, in draughts. In fact, we took every liberty with the climate, yet many old Indian officers have lived to a great age. Dr John Bowen died lately in Brighton at the age of a hundred and one, having served in the Bengal Medical Service for thirty-eight years. Mr William Stalkartt died a short time ago in Calcutta at the age of eighty-four, having lived there for sixty-six years without once going to England or beyond a few miles from Calcutta. Sir Patrick Grant joined the Indian Service at the age of sixteen, and lived to be ninety-three years old. Sir Frederick Halliday is still living at the age of ninety-three; he was the first Lieutenant-Governor of Bengal, after having been Member of the Supreme Council in Calcutta for many years, remaining all that time in Bengal before the introduction of railroads in India. There are also many stalwart old Indian officers still living, after having spent many years in Bengal and other parts of India. Above all, Field-Marshal Lord Roberts of Kandahar, the soldier and statesman of to-day, after forty-one years in India, said in his maiden speech in the House of Lords, 'I love India.' During the Diamond-Jubilee procession, his supple military figure, mounted on his Arab charger, excited the admiration of all spectators, and the loudest cheers; and now, forty-seven years since he joined the Indian army, and at the age of sixty-seven, he is chosen as the most distinguished officer in the British army to serve his Queen and country in South Africa.

I have no original connection with India, being a Welsh woman, born and reared in the cold climate of Wales and Shropshire. My father was the sporting writer of many years ago under the *nom de plume* of 'Nimrod,' and I am his youngest daughter, and only survivor of the family, by his marriage with Elizabeth Wynne of Penarth, whose cousin was the celebrated Sir Watkin Williams Wynn of Wynnstay, who raised the regiment of Ancient Britons during the Irish rebellion, and grandfather of the present Baronet.

The besieged army at Mafeking must recall to the minds of many the siege of Lucknow during the Indian Mutiny; and my memory takes me back to the illustrious garrison at Jelalabad during the first Afghan war, and the foul murders by the Ameer of Kabul.

A short time before the outbreak, General Elphinstone was sent from England to take command of the Afghan army. He was a fine,

courteous old man—'a society favourite'—but quite unfit for any duty, being a martyr to gout and other ailments. We met him at dinner in Meerut with his A.D.C., Lord Jocelyn, and heard him express the pleasure he expected to derive from seeing a new country, as though he was going to 'crush a butterfly'; but he succumbed to the hardships of the first few marches, and died *en route*. I forget how Lord Jocelyn returned to India, but remember that he died in London of cholera, after having married Lady Fanny Cowper, the Queen of Beauty at Lord Eglinton's Tournament. We met his daughters in society in London; both were very beautiful, and died young.

We saw the avenging army on its return to India received by Lord Ellenborough at Ferozpur, with his army and reserve-camp of over sixty-thousand troops. The line was headed by the widow of the brave Sir Robert Sale, seated upon a large elephant; next to her was the widowed Mrs Trevor, with her twin-boys standing by her side in the howdah. The little fellows had bright-red hair; both are, I believe, still living, but the red hair is turned to white. Next came the beautiful Somnath gates, things of beauty and triumph, on a gun-carriage decked with flags, followed by the troops, looking worn, thin, and ragged. These were the survivors of the illustrious garrison. Few of them are alive now; but one I know is: at that time he was a subaltern, and is now General Chetwynd Stapylton, happily married and surrounded by his family. Honours were scarce in those days, and that old hero only wears the Afghan medal.

The horses, like the men, seemed worn out. Only the Bombay Artillery were looking well; they were horsed by Gulf Arabs. The Rev. Mr Whiting (chaplain to the Governor-General) was so pleased with their appearance that he asked one of the gunners what religion they professed, and the answer was that they were 'all Christians except a few Protestants.' The reverend gentleman was so amused that he related the story at Lord Ellenborough's table that night at dinner.

Lord Ellenborough was quite a soldier, and was beloved in the camp. My introduction to him was very amusing. On the day we joined the camp the races were taking place at Ferozpur; and being very dusty after the march, we rode to the back of the course to see what we could of the sport. Here some fences were put up for the afternoon leaping competition; and, our horses being fresh, we took them over once or twice, thinking we were unobserved; but Captain Hillier, A.D.C., rode up asking us, in the name of the Governor-General, to go into the stand, as the sun was getting hot. We made our excuses, but at last were persuaded to accompany the A.D.C. to be introduced to his lordship, who, after shaking hands said, 'I asked Hillier who that girl was,

riding so devilish well, with that shocking bad hat on her head.' I felt quite offended; but his manner soon afterwards was so courteous that I forgot our first meeting, and enjoyed the visit greatly. My hat was both shabby and dusty.

On Christmas Eve the Governor-General gave a large party in his tents. In the middle of one tent a branch of mistletoe was hung up, which his lordship made use of by kissing some of his lady guests under it. He asked Miss Annie M'Caskill and myself to walk with him to look at it; and when there he kissed us both. I drew myself up, saying that I was a married woman; and he replied, 'Oh! are you? Then I will give you another for that.' Miss M'Caskill was the daughter of General M'Caskill, commanding the Meerut Division, and she was at that time engaged to marry Lieutenant Durand, the Engineer officer who placed the bags of gunpowder which blew up the gates of Ghazni. Afterwards he was Lieutenant-Governor of the North-western Provinces, and father of the distinguished Sir Mortimer Durand, now British minister to Persia.

The army of reserve not being required to move on, Generals Pollock and Nott having done the work, the camp was broken up; and soon afterwards we were ordered to Shikarpur, in Upper Sind, lately described by Sir James Lyall as 'the hottest place in the East.' As at that time it was very unhealthy, the native sepoy asked for extra pay to enable them to leave their families in India, and were disinclined to march. Sir Jasper Nicholls was then Commander-in-Chief, and made a sort of promise, which was not fulfilled when the troops arrived in Sind. This caused such discontent that the sepoys of the 64th Native Infantry refused to obey their officers, insulted Captain White the adjutant, pulled the cloth off the mess-table, piled their arms, and refused all duty.

Sir Richard Burton describes the affair in a book published lately by Lady Burton as the Life of her husband. Sir Richard Burton's account, which is quite incorrect, is given in the following words: 'There was great excitement at Shikarpur on 20th June 1844, when the sepoys of the 64th Regiment mutinied and beat their officers. The station was commanded by Major-General Hunter, C.B.—most of his experience was in studs.' But Sir Richard Burton is quite wrong, for General Hunter was in command of the division, and Colonel Moseley of the station; and

the outbreak thus treated so lightly by Sir Richard was actually of great importance, ending in the hanging of seven of the sepoys.

We were dining with Colonel Moseley on that night, when, at eight o'clock, his orderly made the report; it was at once despatched to General Hunter at Sukkur, and soon after daybreak the next morning the General with his staff arrived at Shikarpur, bringing a European regiment and field-battery. He at once addressed the sepoys, ordering them in to Sukkur, where he again addressed them, making several arrests; and on the next day the prisoners were tried by court-martial and condemned, when seven of the ring-leaders were hanged on the Sukkur parade-ground at a full-dress parade of the whole garrison. Thus the mutiny was crushed by the promptitude of General Hunter, C.B., commanding the division in Upper Sind.

We were three years in Upper Sind, including the march through the desert, there and back to Bombay; yet during all that time we had only five days' rain, and that in thunderstorms. But irrigation was so well kept up by the Persian water-wheel that no difficulty was felt on account of water.

We met Sir Charles Napier, the hero of Meeanee, for the first time, on his way to command the Indian army, and afterwards had much of his friendship.

Many young officers were with us at Shikarpur who afterwards distinguished themselves greatly. The present General Younghusband, C.S.I., and Sir William Olpherts were there; also Rattray of 'Rattray's Sikhs,' and Major Jacob, who died young. We rode with Major Jacob to see him lay out the plan of 'Jacobabad,' at that time a dry corner of the desert, and now a flourishing station, with trees, roads, and gardens. The country was very unsettled, and the Beluchis at times troublesome.

The first I heard of Sir William Olpherts was when he was a young lieutenant. He saw one of his guns sinking in a quicksand, when, getting off his charger and mounting a wheel-horse, he so encouraged the team that they drew the guns safely out of danger. The last I heard of him was that he had been thrown out of a dog-cart and dangerously hurt, mutual friends expressing their anxiety as to his recovery; but I was quite sure it would require more than a dog-cart accident to kill Sir William Olpherts, K.C.B., V.C., the survivor of so many fights.



OUR LADY OF DELIVERANCE.

CHAPTER X.—AN ANGEL'S VISIT.



OW for the fruitage of my move to the little house by the river.

Vaurel was an early riser, and was usually away to the woods after pigeons for the Château very soon after sunrise. He was away the morning after our adventure with Roussel before I woke; and, after a delightful plunge in the river, I set the coffee-pot in the core of white ashes on the hearth, and sat down on the wooden bench, with my pipe, to await his return. Boulot had elected to stop with me instead of following his master. He had not forgotten yesterday, and disapproved of my bathing, scuttling half-way up the hillside to await developments. He evidently thought me crazy, and feared to be the next victim of my mania. It was not till I was seated on the bench in the morning sunshine, with the water still in my hair and the glow of it in my blood, feeling fit and strong, and well content with the world—except as regards mademoiselle—that Boulot deemed it safe to come gingerly down the path and sniff round me doubtfully, and then flopped down at my feet with a sneeze of disgust at my late idiotic proceedings.

I was making him squirm apprehensively by suggesting that an occasional bath was good even for a gentlemanly and well-bred bulldog, especially as he expected to sleep on another gentleman's bed, when the short ears pricked up suddenly, and the great head rose from the short thick paws, and looked steadily past me along the side of the hill. Then I, too, caught a rustling among the leaves; and, following Boulot's steadfast look, I saw the figure of a woman approaching the house through the trees, and in another moment mademoiselle stood before me—the lovely face and great true eyes which had wrought themselves into my heart—mademoiselle herself. The beautiful face, indeed, carried the shadow of her troubles; but her eyes were more like the eyes of the portrait, for they sought mine with the touch of questioning shyness which had captivated my soul at the Salon.

Boulot and I sprang up together.

'Down, Boulot!' I said.—'He will not hurt you, mademoiselle,' and in my surprise I spoke in English.

It was in English that she answered me, and with scarce a trace of accent. 'Boulot and I are old friends,' she said, and stooped to caress him.

She wore a long brown cloak, and the hood was drawn over her head. She loosed the cloak and the hood fell back, and she sat down on the bench while I stood before her. My heart was beating furiously at her coming, for it could only

mean that she came to ask my help, or at all events my counsel. Whatever it meant, she had come.

I was still gazing at her with all my heart in my eyes, when she looked up at me timidly and said—and the sweet, soft voice was all in keeping with her face—'If my coming here seems to you an unmaidenly thing to do, monsieur'—She stopped, as though for my name.

'Hugh Lamont is my name, mademoiselle,' I said, 'and the dearest wish of my life is to be of service to you.'

'I thank you,' she said. 'I am surrounded by difficulties'—I think she had been going to say 'enemies,' but hesitated to express her fears so openly—and I scarce know where to turn for advice or who is to be trusted. You have heard about my brother'—

'I have heard, but I do not believe.'

'It heartens me to hear that some one besides myself believes in him. Colonel Lepard promises to get him released—they have sent him away to New Caledonia. I do not want him to be released, monsieur; I want him cleared. You understand'—

'Yes, I understand, mademoiselle; and cleared he shall be if only you will tell me how to go to work.'

'Oh!' she said, twining her fingers tightly together, 'I will tell you all I know, and perhaps you can help me. Colonel Lepard says he will get Gaston released if I will marry him—and I detest him. Father Dieufoy says there is no hope, and my only refuge is a convent; and now he has got the Duchesse de St Ouen down to assist him in persuading me. But I cannot trust them wholly. I cannot forget that I am rich, and that the Church is always poor. What am I to do, monsieur? I am only a girl, and they are too strong for me. I come to you because you are an Englishman, and I am half-English. My dear mother was from Warwickshire, and when Jeanne Thibaud told me there was an Englishman here who offered me his help my heart was glad. Though why—ah! yes, I remember—the portrait Monsieur Roussel painted for the Salon—Jeanne told me of it. How did you get it, monsieur?'

Without going into particulars, I told her I had bought it; and, stepping into the little house, I unlocked my portmanteau, brought it out in its case, and unrolled it before her. 'I value it more than anything else in the world,' I could not help saying. She regarded the portrait steadfastly, and in silence.

'Do you know that M. Roussel has been here, mademoiselle?'

'M. Roussel!' she said, with a startled look. 'What does he want here?'

'I don't know what he wants. He said he came to paint.'

She shook her head, and said as naively as a child, 'Monsieur Lamont, I do not think Monsieur Roussel is a good man. I wonder what he is here for.'

Perhaps I could have told her what brought him, but I thought it better not.

'He is not here now, mademoiselle. He fell into the river yesterday, and we have not seen him since. They are afraid he is drowned.'

'That was what brought all the people down to the banks yesterday?' she asked.

'Yes.'

'They did not find him?'

'No, they did not find him.'

'But he may still be alive?'

'He may be; but it is unlikely. When he went into the river Boulot's teeth were in his throat.'

'Where was he staying?'

'At Madame Thibaud's, in the village.'

'And he has not been there since?'

'He would hardly dare to show himself. He knocked Prudent Vaurel into the river and tried to drown him. Then Boulot got him by the throat, and that is the last any of us saw of him.'

The thought of it all caused her evident discomfort.

'If you will tell me all you know about this matter of your brother's, mademoiselle,' I said, to draw her thoughts elsewhere, 'I shall do everything in my power to set things right. I know at present only what the world knows.'

'I'm afraid I know but little more. Colonel Lepard knows everything. Gaston and he quarrelled—about'—she stammered.

'I know,' I said encouragingly.

'And when Gaston was arrested, not very long afterwards, Colonel Lepard came to me and promised to help him; but'—

'But you do not trust Colonel Lepard?'

'I do not. He practically made it a condition that I should do what Gaston, I knew, would never have me to do, and—and'—

'And the colonel's promised help was not forthcoming.'

She nodded. 'I hate him,' she said in a low, vehement voice; 'but for Gaston's sake and to clear his good name I would willingly sacrifice myself.'

'That must not be,' I said, vehement in my turn. 'It shall not be, mademoiselle. Promise me you will never think of such a thing.'

'I trust you, Monsieur Lamont—for yourself, and because those whom I can trust, though they cannot help me, tell me you are an English gentleman, and in helping me, you, at all events, have no end of your own to serve.'

I thought differently; but it was too soon to tell her so.

'Now, how can I help you, mademoiselle? It is evident that Colonel Lepard holds the key to your brother's troubles. In what way can I force it from him?'

'I know so little,' she said, 'except what he himself has told me.'

'And that we cannot depend on.' It was very pleasant to find myself associated with her in this way.

Mademoiselle fell suddenly silent, and I saw from her knitted brow that she had got a new idea, and was working it out in her own mind. She looked up hesitatingly at me once or twice as though in two minds whether to voice her thought or not.

'Mr Lamont,' she said at last, 'I am going to ask a strange thing of you;' and I saw her eyes were pathetically bright and very near to overflowing. 'You will not misjudge me?'

'I could not, mademoiselle.'

'Then I beg of you to come and stay at the Château. I am only a girl, and one against three, and I am not strong enough to stand against them. Will you come?'

'That is but a very little thing to ask of me, mademoiselle.'

'One cannot tell what it may lead to,' she said—and my heart hopefully agreed with her—but I shall feel not quite so much alone in the world. I know—I know,' she said, with a break in her voice, 'I am passing all bounds, but you will let my necessity excuse me.'

'If you knew what pleasure it gives me to be of any service to you,' I said. 'Now, under what guise shall I come?'

'I was thinking—you might be an English friend of my mother's. Stay—be a cousin! That will be best, and no one can question your right to be there. You have heard of our troubles, and in Paris you learned I was here, and followed me to see if you could be of any assistance to me.'

'Capital!' I said; and then suddenly remembering: 'But what of the old priest? He saw me in the train that day. Will he know me again?'

Her face fell. 'I did not think of that,' she said despondently.

'I can get over that,' I said, with a sudden inspiration.

Here Boulot's bits of ears pricked up again; the nose of the punt ran softly into the bank, and Vaurel stepped ashore with a bunch of pigeons hanging down at each side of his neck. He had been up the river towards Bency, and so we had not seen him coming.

'Mademoiselle!' he said deferentially, and stood before her cap in hand.

'Prudent, *mon ami*,' she said, with a brighter look in her face, 'I have been making dis-

coveries in your absence.' Vaurel cast a deprecatory glance towards the door of his house. 'No, not about you, *mon ami*. About M. Lamont here. Do you know that he is a relative of my mother?'

'You don't say so, mademoiselle?' he said, in huge surprise.

'And he is coming to stay at the Château, as is only fitting.'

'Truly!' said Vaurel, not over-joyfully. 'But it is I that shall miss him. We have been good friends, monsieur and I. I know a man when I meet one, and so does monsieur.—Is it not so, monsieur?'

'That is so, Vaurel; and we shall be none the less friends, I hope, because I am shifting my quarters.' But Vaurel shook his head doubtfully.

'I must go,' said mademoiselle, 'or they will miss me. When will you arrive, Monsieur Lamont?'

'By this evening's train. I shall run up to Rennes, and send you a telegram from there, and you can send the carriage to meet me.'

'Good!' and she clapped her hands like a child. 'I feel better than I have done since I came here. Adieu, Prudent!—*Au revoir*, Monsieur Lamont!—Good-bye, Boulot!' and she patted the big head which wrinkled up to her touch, and then stepped lightly away into the wood.

'Monsieur is in luck,' said Vaurel when she had gone.

'Mademoiselle is in trouble, my friend; and if I can do anything to assist her I am going to do it. I can count upon you if I need help?'

'To the last drop of my blood—for mademoiselle,' he said.

(To be continued.)

OLD MAN DAWSON'S 'PLOUGHING BEE.'



HERE was a 'bee' at Old Man Dawson's, on Mosquito Creek, in Alberta, North-west Territory, Canada. Dawson was an old-timer of the old-timers, buffalo-hunter, Indian-fighter, and fur-trader; now he was growing old, and had taken up as a homestead one hundred and sixty acres of wild North-western land.

It may sound very smooth and delightful to speak of 'taking up' a place and 'breaking' so many acres; but, as a sober fact, this little matter of breaking the virgin soil—picturesque phrase!—is not a festive picnic.

Now, a 'bee' is an attempt to turn this breaking business into a festive picnic. It works thus: You have 'a place'—one hundred and sixty acres of Canadian earth, mud, trees, weeds, rocks, and mosquitoes. Vastly proud were you when you 'entered for' your Farm. I spell Farm with a capital F, because that is how you used to think about it. 'There are many fine cotton-wood trees on my Farm;' 'There is a spring on my Farm;' and you figure out on paper that a walk round your Farm is two miles long, and that you are the owner of six million six hundred and ninety-six thousand and six hundred (6,696,600) square feet of this earth. Then you can turn your attention to reckoning the value of prospective crops: so many acres, so many bushels at so much a bushel. It is a fascinating and harmless amusement, and may make you swell visibly with joyful pride; but it will not break your land.

There are, then, three courses open to you: the first is, you may 'rustle' for yourself, and by the sweat of your brow and with the help of

a team and plough (bought on the time system) you may break an insignificant-looking patch of land; the second, you may pay a man three dollars an acre to do the work for you—this is the way of the 'remittance man' and others of his kind; the third and most popular course is to have a 'Ploughing Bee.'

You invite your neighbours to come to your farm on a certain day, and to bring with them their ploughs and teams of horses. Then their part of the programme is to set to work and break your land for you.

In the meantime good ladies of the neighbourhood, ministering angels, are busily at work in your 'shack,' preparing the tables for dinner; some, too, pass up and down the field with drinks for the men who are changing your green, bush-grown, wild land into rich, black, healthy-smelling earth—drinks of cold tea, water, and (whisper this) beer in wooden pails and stuff in bottles. Perhaps the stuff in the wooden pails and in the bottles may explain why some of the furrows look like reeds shaken in the wind; it may also explain why some of the men, when they come in to supper, trip over the doorstep or upset their tea-cups; but it is a jovial, good-natured crowd, which does not transgress the rules of Western etiquette when women are present.

Perhaps some of the men may look unusually solemn; others again may talk somewhat loudly about the number of rounds they made, how Jim Snaffle's team of bays 'led the bee,' and how Long John got stuck in that bluff of willows on the north-east corner; and thus the talk goes on about the thousand-and-one things of interest to the settler in a new country. The tenderfoot

sits still and listens; and while he may profess to despise much of it—as coming from men of

Beefy face and grubby 'and:

Lor'! what do they understand?

—he yet cannot help admiring the force, the readiness—yes, and the knowledge—which are mastering and are breaking and taming this wild North-west.

All day the 'bee' had been in progress at Old Man Dawson's. He was very popular; many friends had rallied to his call, and a long, broad patch of freshly-turned earth gladdened his eyes when evening came. It had been a most successful 'bee'; the weather had been perfect, a cool breeze keeping down the mosquitoes, and enabling men and horses to work at their best.

Full justice had been done to the stuff in the wooden pails and in the bottles, and a feeling of mellow contentment possessed everybody. Good work had been done that day; now that the evening had come there was to be a dance at Old Man Dawson's house.

The girls of Mosquito Creek were there in full force; and, like all North-western damsels, they were pleasant to look upon, healthy, lively, good-natured, and hearty, with an endless capacity for hard work and an equally endless capacity for play. In staying power they are far superior to the winner of a six days' bicycle race. He might faint from exhaustion if he stood up to all the dances at a North-western dance; but what does a Western girl do? She will drive twenty miles or more to the house; dance with tremendous activity and vim from half-past eight in the evening till six o'clock next morning; keep herself perfectly cool and smiling through all the dust and turmoil of the rout, while strong men are gasping for breath and looking streakily hot; and then she will drive twenty miles home—tired? Not she! Mind you, she has not 'sat out' one dance.

While the girls were arriving, those men who had been ploughing were behind in the stable getting into their best clothes, which they had brought with them in the morning. Other young men were driving up—young men from the Fort, looking rather dressy in their thin shoes, collars, and gaudy ties—and fully conscious of the fact. There, too, was the school-teacher, a lanky, self-satisfied-looking individual, with a high collar and conspicuous cuffs. He was a 'dood' (man of fashion); not a doubt about it, for he wore a 'Chinese biled shirt' on all occasions; and there was an awful legend to the effect that he owned a tooth-brush, and that he varnished his yellow shoes. Down with such base truckling to the conventionalities of the effete East!

There were also other young men there—dusky half-breeds, black-haired and bright-eyed, stepping with easy, cat-like grace with their moccasined feet.

Then there were the wall-flowers. These are

always men at a Western dance, for a woman must be over one hundred years old, deaf, blind, and completely paralytic before she will sit out a dance in the North-west. So the wall-flowers were heavy-booted youths, slow of speech, sitting like graven images on the benches round the room.

Of men at a Western dance there is never any lack—men of all kinds, shapes, and sizes; a motley and a cosmopolitan crowd: young Englishmen with histories; young Englishmen without histories or *h's*, stolid, bovine; Scotchmen, both Lowlanders and Highlanders; Irishmen with the ready jest; French Canadians, black-eyed, gesticulating, good dancers these; young men from Eastern Canada; Parry Sounders; and fish-eaters from Newfoundland; and all bent upon enjoying themselves and having 'a good time.'

Next, the ladies! The chief thing to be noticed is that there are not enough of them; there never is. Married or single, the ladies are there to dance. You will see the house-mother, with half-a-dozen grown up sons and daughters, tripping it as lightly and as untiringly as the schoolgirl. Babies are wrapped in shawls and laid on the bed, or given to their fathers to hold while the mothers dance.

'Partners for a quadrille!' shouts the self-appointed Master of the Ceremonies, a big half-breed, with shining face and eyes sparkling with excitement.

Then follows a rush to secure partners. It is considered the proper thing for the young man who has brought a lady to a dance to dance first with her; after that he is free to choose other partners; but a lady is bound, by the rules of Western etiquette, to refuse no man who asks her to dance with him. This is a law which must not be broken.

There is room on the floor to dance two sets of a quadrille, and eight couples are standing in order as the fiddler strikes up.

'Honour your partners!' 'Corners the same!' 'First couple, lead to the right; four hands round!' And so the dance goes on, the caller shouting his directions, and now and then piloting and putting straight a dancer who is going astray. When he says, 'Swing your partner!' do it—not a delicate touching of finger-tips at arm's-length, but take the lady's waist in a strong embrace, and whirl her vigorously round, off her feet if you can, and she will not object. This is no languid walking through a quadrille, but a dance; stamp your feet; kick up the dust. 'Grand Right and Left!'

Watch that half-breed dancing with the light-footed Irish girl; that is dancing; music is in their feet. Look out for this heavy-booted Parry Sounder who is 'promenading' behind you with the mother of fourteen young Canadians. Look out for him; he will kick your heels off

if you do not get out of his way with your partner, a dark-eyed maiden whose dash of Indian blood accounts for the supple gracefulness of her figure.

'Promenade all; you know where!' shouts the caller. This is a delicate hint that that dance is over, and you lead the lady to a seat, gasp out 'Thank you,' and make a dash for the open door to try to cool off. While you are doing this another dance will be in progress, and through the clouds of dust you will see your late partner being whirled round by a member of the North-west Mounted Police.

Dance follows dance; now it is a waltz, in which some of the tireless girls, lacking partners, waltz with each other; now it is a jig, and this is where some of the half-breeds shine. Have you ever seen the 'Red River Jig' danced by half-breeds?

'The next dance will be a song!'—so says the facetious Master of the Revels. It is an old, old jest, yet it never fails to raise a laugh, even the graven images on the benches joining in with a hoarse guffaw.

'Song from Miss Cavalle!'

Miss Cavalle bashfully tries to run out of the room, but is easily caught and brought back in triumph.

'Really, I cannot sing. I would rather not. Please excuse me. I have a very bad cold.'

'Nonsense! nonsense! Song from Miss Cavalle!'

'Put your cold in your pocket!'

Thus adjured, Miss Cavalle, without accompaniment, begins to trill forth a ballad about a certain young man

With a little black moustache;
And every time he looked at me
My heart went like a flash.

It appears from the poem that the faithless swain deserted her for a 'sour old maid with lots of cash'—to rhyme with the 'little black moustache.'

Thunders of applause break forth as she concludes with the warning 'to all you girls,' &c., not to fall in love with a stylish 'dood with a little black moustache.'

Oh yes, the North-west is sudden death to 'doods.' Then Mr Johnny Meech, who has been sleeping off the effects of the stuff in the wooden pails and in the bottles, is asked to oblige the company with a song. Evidently he expected this, for he at once begins to warble a plaintive ditty of forty stanzas, mainly about nothing. He has forgotten the tune—if it ever had one—and many of the words; but that does not hinder him, for it really does not matter if half the words be left out, or all of them. Everything, however, must come to an end. Mr Meech pauses, and some one sitting next to him asks, 'Is that all?' 'Yes,' says Mr Meech, 'that's all.' Then, and not till then, does the applause break forth.

Honest folk! kindly folk! I wonder if any of them perceived the delicious irony of applauding when they heard that that was all.

Then Miss Cavalle, forgetting her cold, consents to sing another ballad. This tells the long and affecting tale of a sailor-man who met, in a coconut grove, a dusky young woman, 'the fair maid of Bohee,' a forward damsel, who invited the wanderer into her hut and made him a proposal of marriage.

Great applause follows this song, after which there are more dances, quadrilles and Circassian circles. About half-past twelve we have supper. The ladies of the house go round the room with teapots of strong tea and plates of cake—cake of many kinds, sweet, sticky stuff. One of the wall-flowers on the bench close beside me devours no less than fourteen different species of cake, washed down with three or four cups of tea.

After supper we have the 'Rabbit Dance.' This is a Northern dance, and it is eminently suited to a cold climate, as any one who has taken part in it will confess. But imagine it on a warm night in the later part of June, in a small log-shack, with the dust rising in choking clouds!

The dancers form up on the floor in two parallel ranks, facing each other, the men standing in one, the women in the other. Then the pair at the head of the line join hands, and with a peculiar, skipping step, dance down the centre twice, then separate, the man dancing alone at the back of one line, the woman doing the same at the back of the other line, till they arrive at the bottom, where they meet, join hands again, and dance to the top, and once more separate.

Then the fun begins, for the girl starts off alone and the man has to catch her. This may sound easy; but just try it. A little room which seems to be full of chairs, benches, and people's feet; a blinding dust; two lines of mocking men and women—you must not break through the lines—and a laughing girl, your 'rabbit,' supple and full of vim, skipping gracefully away from you as you plunge about, run into the wall, or fall over an intercepting foot: these are some of the features of the famous 'Rabbit Dance.'

After the first 'rabbit' has been caught, she and her partner take their places at the bottom of the rows, and the second pair start out on their journey; this is repeated until all the 'rabbits' have been caught. Then they begin anew, with this difference, that now the 'rabbit' has to catch the man; and she generally does it in quick time.

The onlookers shout encouragement to the dancers, mixed with criticism: 'That ain't the Rabbit Dance! You mustn't run; skip, skip like a rabbit! Keep time to the music!'

Then more quadrilles; the lamps are put out,

and streaks of sunlight shine through the window panes. The big 'caller-off' has been getting rather hoarse, and has resigned in favour of a pale, straw-coloured youth with wispy hair. This callow young man had brought himself into notice by coming out of a fit of abstraction and droning forth, in a most lugubrious tone of voice, an alleged comic song. After having thus contributed to the evening's hilarity he relapsed into melancholy efforts to keep alight a wheezy pipe until he was summoned to 'call off' for the dancers.

The sun is shining brightly now; thoughts of cows to be milked and other 'chores' to be done cause the people to begin to get ready to go home. The men go outside and hitch up the patient horses that have been fighting with mosquitoes or standing in the evil-smelling

smoke of the 'smudges' during the long, weary hours.

Some of the people go away in bumping, creaking wagons, some on horseback, and some happy couples in buggies and buckboards.

Mrs Grundy was not there; in fact she seldom appears at dances in the North-west.

Miss Cavalle, basely deserting the youth who brought her to the dance, is driven to her home by a dashing young farmer, one of the Beau Brummells of the neighbourhood, the owner of a whole section, fenced, with a frame-house upon it.

Old Man Dawson's Bee has ended; everybody has had 'a good time.'

There is plenty of hard work in the North-west; but the hardest work of all is to be seen at a North-western dance.

ARRECIFOS.

CHAPTER X.—THE 'LITTLE CELEBRATION' COMES OFF.



BRIGHT flame lit up the black line of palms on the island, and then another, as two fires shone brightly out upon the beach and continued to burn steadily.

'Ah!' said the Greek, who just then came on deck, 'the Kanakas will hava gooda time to-nighta—pork, turtle, biskeet, feesh, everything. They are alla gooda comrade to-night too;' and he showed his teeth in a hideous grimace which was intended for a friendly smile for the chief-officer.

Supper was late that night on board the *Mahina*; for Mosé, the brown-skinned Manihiki steward, was, aided by the cook, preparing such a supper as had never before been seen on the brig—at least so he told Rawlings, who had cheerfully agreed that eight o'clock was not too late. At half-past seven Rawlings himself came below to see the table and Mosé's ideas of decoration.

'Why, Mosé, you're quite an artist,' he said as he went into his stateroom. 'Keep the lager as cool as you can. Put half-a-dozen bottles and some hock on the poop with some wet towels round them. We'll be up late to-night.'

'Yes, sir,' answered the man, and as he turned away a grim smile for a second flitted across his swarthy features.

Eight bells struck, and as Rawlings, Barradas, and the Greek took their seats at the cabin table, Barry came out of his own cabin and sat at the forward end of the table. Rawlings was opposite him, and the Greek and Barradas also faced each other.

As the steward brought in the turtle-soup, there came the strains of a wheezy accordion from the main-deck, and then three or four voices joined in a native chorus, broken now and then by a

laugh, and the sounds of naked feet stamping time to the music.

'Hullo!' observed the Greek, with his usual grin. 'Billy Onotoa and the other fella on boarda are hava a bita sing-songa and dansa too.'

'Let them enjoy themselves to-night,' said Rawlings pleasantly. 'And, steward, send them up a bottle of grog. When the rest of them come aboard they shall have half-a-dozen bottles between them. It won't hurt them once in a while.'

The bottle of grog seemed to have a rapidly stimulating effect on the men on deck, for the 'harmony' began with renewed vigour; and amid it all, as Billy Onotoa and four other of his shipmates thumped their feet and slapped their bare chests and chanted their song louder than before, two score of naked figures climbed softly over the bulwarks, and with scarce a shuffle of foot disappeared forward and crouched in silence under the darkened topgallant fo'c'sle. The door of the sail-locker slid back, and three feminine forms, one of which was clothed, stole quietly in. Velo, with a pistol in his belt and his finger to his lips, crouched before it, and listened to the murmur of voices from the cabin.

Rawlings was in such excellent spirits that he could not refrain from 'chaffing' his chief-officer upon his want of appetite, and kept pressing him to drink.

'My dear Barry,' he said, 'you really want livening up. You have worked too hard altogether, and seem a bit run down. Come, if you won't drink lager, try a glass of hock.'

'Yesa,' said the Greek, with the grin that was so intolerable to the man he meant to murder, 'you have worka too harda, Mr Barry. Ah! when you get to Singapore you will feela betta;

there is fine prawn curry there in Singapore—make you feel stronga. Make you feela you wanta come back quick to Arrecifos and find more pearla.'

Barry looked up wearily, but for the twentieth part of a second his eye met that of Mosé the steward, who slipped behind the Greek's chair and filled his glass.

'No, thank you,' he said to Rawlings; 'I won't drink anything just now. I feel a bit of a headache. I'll sit on the transoms a bit, and get a breath of fresh air from the stern port.'

He rose from his seat and walked toward the stern; but as he was about to pass Rawlings his left arm shot out like lightning and seized the captain by the throat; and at the same instant Barradas, rising to his feet, leant across the table and struck the Greek a fearful blow between the eyes. There was no need for the steward's help—the man went down like a stone dropped into a well.

Then came a sudden blaze of lights, a rush of naked feet, wild cries, and an English cheer from Joe and the white seamen, as the cabin was filled with the excited crew and their island allies.

Rawlings lay gasping upon the cushioned transoms, with Barry standing over him; the Greek had been dragged up into a sitting posture, and placed with his back against a cabin door, whilst Barradas proceeded to handcuff and leg-iron him. Then, together with Velo, who was carrying another set of irons, the second-mate came toward Barry and Rawlings.

'This fellow's pretty little hands and feet are too small for them,' said Barry. 'Carry him up on deck, you, Velo and Joe, and wait till he comes to. Then lash his hands athwartships behind his back, and take him and the Greek ashore. Keep a good lookout over them, and see that they have water to drink when they ask for it. They will swing at the gallows for their crimes. Let us be as merciful to them as we can; but for God's sake take them away from here quickly; their very presence poisons me. Barradas, come here; give me your hand again. Down on your knees and thank God that the woman you thought was murdered is alive *and is here.*'

The Spaniard looked at him with pale face and shaking limbs. 'What do you mean?' he asked hoarsely.

'I mean that Mrs Tracey is not dead; and she has forgiven you. Stay here.'

He waited until Rawlings and the Greek were carried on deck, and then motioned to Mosé the steward.

A quick step sounded on the companion-ladder, and Mrs Tracey was in the cabin. Barradas was sitting at the table, with his hands over his eyes.

She placed her hand upon his shoulder and

said softly, 'As Christ forgives us all, so may He forgive you, Manuel Barradas; and so may He forgive those who'—

Barry stole swiftly up on deck, and left them together.'

CHAPTER XL—CAPTAIN BARRY WITH A FULL PURSE AND A LIGHT HEART.

BARLY on the following morning there was great bustle and excitement both on board the *Mahina* and on the beach of the south-eastern island. The two large boats were loaded with stores and sent ashore, for Mrs Tracey and Barry had decided to take possession of Arrecifos by virtue of the protection order given to Tracey in Sydney by the Commodore, which had been found in Rawlings's cabin together with all the other papers belonging to the dead captain. Velo, with six men, was to remain, and with the help of the willing Tebuan people, to continue to dive for shell, and await the return of the brig in six months' time.

So at nine o'clock the red ensign of England was run up on a flag-pole in the centre of the little village, amid the cheers of the crew—cheers which were bitter to the ears of the two men who were lying bound and guarded in one of the native huts, awaiting to be taken on board again.

Then came the time when Barry and Mrs Tracey had to say farewell to their brown-skinned friends; and they had to shake hands with every man, woman, and child. The prisoners were first sent off; and Barradas, taking no heed of their savage curses and murderous looks, saw that they were placed in the deck-house, and a sentry placed over them. Their leg-irons Barry intended to remove once the brig was clear of the land.

Velo, ever-faithful Velo, wrung Barry's hand again and again; for, proud as he was of being placed in charge of the island, his distress at parting from him was very great.

'There, good-bye once more, Velo. Don't work too hard; and if a man-of-war comes, be sure you go on board and give the captain that letter. Come, Mrs Tracey, we must be going. See! Barradas is already hove short, and waiting for us.'

Helping Mrs Tracey into the whale-boat, Barry followed and grasped the long steer-oar.

'Give it to her, men; there's the brig breaking her heart to get away.'

The light boat shot out like an arrow, and was soon alongside, and Mrs Tracey was met at the gangway by Joe and another white seaman, both dressed in new duck suits given them by Barradas; but, instead of going into the cabin, Mrs Tracey waited at the gangway for Barry.

'I want to welcome the new captain of my

ship,' she said, with a smile, as she held out her hand to him.

'Thank you, madam;' and Barry raised his hat to her in such a formal manner that she laughed again, and asked him if he was afraid of the brig's owner; and Joe winked atrociously at Sam Button, and said in a loud whisper, 'He's a lucky cove—'e is, Sam. W'y 'e can marry the howner for the arskin'. I can see it hin 'er eye, stickin' out a foot.'

'Man the windlass again, Mr Barradas;' and Barry, with a happy smile, sprang on the poop and himself took the wheel.

Up came the anchor from the coral bed in which it had lain for so many months, and ten minutes later the *Mahina* was slipping through the smooth water of the lagoon towards the passage. Another hour, with every stitch of her white cotton canvas shining bright in the glorious noonday sun, and she was dashing over the long mountain swell of the North Pacific, and heading south before the lusty trade-wind.

For thirteen days the *Mahina* ran southward, till she was in sight of Nitendi, one of the Santa Cruz group; and off Nitendi she met Her Majesty's gunboat *Reynard*, which was employed in patrolling the New Hebrides. Barry signalled that he desired to communicate; and, going on board, he had a long conversation with the commander, to whom he told the strange story of the *Mahina*.

'Well, I'll take your prisoners from you, Mr Barry, as you have made the request. I am bound to Noumea, and from there I can send them on to Sydney for the trial. I wish I could dispose of them both in the good old-fashioned style, by dangling them from the end of the yardarm. Now as to this other man Barradas—he seems to have made all the amends possible in his power; but nevertheless he certainly was their accomplice in the piracy of the vessel. This may mean from two to five years' imprisonment—unless,' he added carelessly, 'he runs away before you get to Sydney.'

A boat was sent from the warship, and Rawlings and the Greek, still wearing their irons, were handed over to the officer in charge. Not once during the voyage had Barry spoken to them; and now, though he did not know it, he was looking at them for the last time. In half-an-hour the two vessels had parted again. That night as the brig was moving quietly through the water, and Barradas had just relieved Joe (who was now second-mate), the captain came and stood beside him, and began to speak to him in low but earnest tones. The Spaniard listened intently, but shook his head every now and then in dissent.

'I cannot do anything like that, sir. I am no longer the poor trembling coward, but ready to meet my punishment, whatever it may be.

No, sir; I must stick to the ship and be a man.'

One day, nearly a month after the brig had spoken the *Reynard*, old Watson walked into the big room of the Sydney Merchants' Exchange, as he had done the first thing every morning for some weeks, and scanned the 'arrivals' board; for the letters which Barry had written to him and Rose Maynard had come safely to hand nearly six weeks before. Almost the first notice that met his eye was this: '*Brig flying Hawaiian Islands' colours entered 8.45.*' The old man tossed his hat up to the ceiling and gave a loud hurrah.

'Hullo, Jimmy! what's up?' said an acquaintance whom he ran up against at the door, and nearly knocked down in his eagerness to get out again.

'That brig I was looking out for has just come in. I'm off to tell the girl first, and take her aboard.'

In another twenty minutes he was tugging at Mr Maynard's bell. Rose came to the door, and knew by his face that he was the bearer of good news.

'It's all right, miss! The brig is in, and anchored by now. Will you come aboard with me? Do, now.'

Rose laughed. 'Mr Barry won't want ladies on board just now, Mr Watson.'

'Well, well, miss, just as you please. Any message for him.'

'Yes,' she replied; 'tell him that my father and I will be waiting for him outside the Custom-house, and that he must bring Mrs Tracey with him, and that there is a room all ready for her, for she must stay here.' Then she darted away to dress and call her father. The old mate hurried off to the quay, hailed a boat, and was soon on board and shaking hands with Barry, who was only waiting to accompany Mrs Tracey on shore.

'The lady is well, and blooming like a rose; and the old gentleman is in good fettle too. We got your letters six weeks ago by the Yankee whalers. I saw the lady just now;' and then he gave Barry Rose's message.

'Here I am to receive the message myself,' said Mrs Tracey, coming out of her cabin, and shaking hands with the old seaman. 'You are Mr Watson? I guessed it was you when I heard your voice. I shall gladly accept Miss Maynard's invitation, if she will have me for a few days. Oh, I'm dying to even speak to a white woman again!'

'Just so, ma'am,' said Watson. Then turning to Barry again, 'But wait a bit; I haven't told you all the news. Rawlings and the other chap are dead.'

'Dead!'

'Ay; both of 'em.'

'How do you know?' asked Barry quickly.

'The *Eclipse* man-of-war brought the news from Noumea last week. Here's the account of it.' He spread a newspaper out on the table, and pointed to an article headed 'Tragedy in the South Seas.' Mrs Tracy and Barry read it together :

'Just as the *Eclipse* was leaving New Caledonia the gunboat *Reynard* arrived, and reported having spoken the Hawaiian brig *Mahina* in the vicinity of the Banks group. The acting-master informed the commander of the gunboat that he had on board in confinement two men who some months previously had murdered the captain of the brig and seized the vessel. By the aid of some natives the chief-officer succeeded in retaking her, and the two men were overpowered and placed in heavy irons. Commander Wrayburn of the *Reynard* consented to take charge of them, as the brig was deeply laden, and likely to make a long passage to Sydney. They were at once transferred to the gunboat, which then proceeded on her voyage to Noumea.

'About a week afterwards one of the two, a powerfully-built Italian or Greek, who was of a sullen and savage disposition, was relieved of his irons for half-an-hour by the doctor's orders, and placed on deck with his companion, as he complained of a severe pain in his chest. This was evidently a ruse ; for, while the sentry's back was turned for a moment, the Greek seized his fellow-pirate (who was in irons) by the waist, and leapt overboard with him. They sank immediately, the Greek no doubt having determined to drown with the other man.

'Fuller particulars of the seizure of the brig and her recapture will be looked forward to with interest on her arrival here. It is stated that she has a cargo of "golden edge" pearl-shell worth over forty thousand pounds.'

Mrs Tracey shuddered and covered her face with her hands. 'Heaven forgive them their crimes,' she murmured.

Barry could not help a certain feeling of relief. Both he and Mrs Tracey had looked forward to the

trial of Rawlings and the Greek with the utmost aversion ; for, heartless villains and murderers as they were, their death at the hands of the law haunted Mrs Tracey like a nightmare ; and Barradas himself had a growing horror of the coming time, for on his evidence alone Rawlings would certainly be hanged.

'I must tell Barradas,' said Barry. 'Steward, send the mate here.'

The Spaniard heard in silence, bent his head and crossed himself, and quietly went on deck again. He knew that in a few hours, or a day or so at most, he would be arrested, but knew also that his conduct since the murder of Captain Tracey would go largely in his favour, and that in both Barry and Mrs Tracey he had friends. As for attempting to escape, he had put the thought away at once and for ever the night he walked to the little island cemetery.

Here, as my story draws to an end, let me tell what became of Manuel Barradas. He stood his trial, and came off with a light sentence. Two years later he was back on Arrecifos Lagoon, overseer, in charge of the famous pearling station owned by 'Tracey & Barry,' where he remained for long, long years, happy and contented, and with his mind at rest.

It is ten o'clock at night, and a quiet but happy group are seated in Mr Maynard's sitting-room. Barry is retelling the story of the voyage of the *Mahina* to the old gentleman, and big, red-faced, and rumbling-voiced Jim Watson now and then puts in a question, as, with a long tumbler at his elbow, he puffs at a huge cigar. At the other end of the room Mrs Tracey is sitting with Rose Maynard's head leaning on her shoulder.

'When is it to be, Rose?' and Mrs Tracey tries to make the girl lift her face ; 'come, tell me. Indeed, you must, for although he will be *your* husband, he will always be *my* captain—at least, I hope so.

Rose blushes. 'Next week,' she whispers.

THE END.

THE MONTH: SCIENCE AND ARTS.

THE PROTECTION OF WILD ANIMALS.

FOR many years naturalists have pleaded for a sanctuary for the wild animals of Africa, many of which are, owing to the greed of hunters, threatened with extinction.

Happily we are now within measurable distance of the realisation of this wise suggestion, for a convention was recently signed by the different European nations interested in 'the Dark Continent,' by which full protection will be given to various birds, beasts, and fishes

within a prescribed and immense area. The convention prohibits the hunting and destruction of certain scheduled animals, and provides for the establishment of reserves and a close season. The use of nets or pitfalls is forbidden for taking animals, and fishes must not be killed by explosives or drugs. Export duties will be levied on the hides of giraffes, antelopes, zebras, &c., and the killing of young elephants is prohibited under severe penalties. There are also clauses which protect the eggs of ostriches, and others which encourage the destruction of the eggs of crocodiles, poisonous snakes, and those of pythons. The

contracting parties further undertake to apply, as far as possible in their respective possessions, measures calculated to encourage the domestication of zebras, elephants, ostriches, &c. It will thus be seen that this particular European concert is likely to result in a vast amount of good.

A DARING EXPERIMENT.

In order to settle the important question whether malaria is spread, as suspected, by the bite of the mosquito, two Englishmen, Dr Louis Sambon and Dr Low, are about to proceed to the Roman Campagna in order to put the matter to the test of practical experience. They are to live in this fever-stricken district for six months, mixing freely with the populace during the day, but shut up in a mosquito-proof house at night. This house will be protected by fine wire-gauze, through which the insects cannot enter. If the inmates escape malaria—living as they will, save for the protection of the wire-gauze, under the same conditions as the stricken peasantry—it may be considered a certainty that the disease is spread by the mosquitoes. However, there will be a further test. The doctors will rear some mosquitoes, and some thirty or forty of the insects, after being allowed to bite a malaria patient, will be sent to London and set free in a room where some students will be sleeping; and if these self-sacrificing individuals show, in ten days or so, symptoms of the disease, the matter will be proved beyond doubt. The heroism of the two men who are willing to risk their lives in the service of their fellow-men by voluntary exile to such a fever-den as the Roman Campagna is beyond praise. It requires something more than a Victoria Cross for due recognition.

AN ELECTRIC FIRE-ALARM.

An exceedingly effective automatic fire annunciator has been devised by Mr May, of New Zealand, and the fire-brigades there are reported to have a very good opinion of it. The apparatus is comparatively simple in character, and consists mainly of a slender copper or silver wire, which is placed near the ceiling of the room to be protected. This wire is horizontal in position, may be of any convenient length, and is attached to fixed supports at each end. It is obvious that such a wire will stretch and consequently sag in the centre under the action of heat, and a small rise in temperature will cause it to do so. At its central point, where this downward movement will be most apparent, there is a weight attached, the lower point of which impinges upon an adjustable platinum contact-point contained in a glass tube. In this manner an electrical circuit is completed, a bell can be rung at a distant point—say the fire-brigade station—and at the same time, by means of a Morse receiver, a code-signal showing the particular house where the danger threatens is conveyed to the officials. We

suggest that a modification of the arrangement could well be used for automatically opening a ventilator when a room becomes inconveniently hot.

THE BATTLE OF THE PAVEMENTS.

Municipal bodies all the world over have for years been trying to solve the problem of finding the best form of paving for our street roadways, and there are advocates on the side of asphalt as there are on the side of wood. It is, therefore, interesting to refer to a report recently submitted to the London Corporation by their engineer, Mr D. J. Ross, which deals with the comparative durability and cost of the two materials in question. Deal wood has been in use since 1871, and in streets subject to heavy traffic has to be relaid in from five to seven years. The Australian hardwood did not seem to him to be as durable as anticipated, and in some parts of London it had been removed and the deal wood substituted for it. Asphalt had been in use in the City since 1869, and in minor streets, where the traffic was small, it had been down for thirty years. In the Poultry—where the traffic is exceptionally heavy—it did not require renewal for nineteen years. He reported in favour of the use of asphalt rather than wood in a thoroughfare like Holborn Viaduct, where twelve thousand vehicles passed over the roadway in twelve hours. The cost of asphalt was almost identical with that of hardwood paving.

IRRIGATION IN PALESTINE.

With the introduction of machinery much that is picturesque in life must necessarily disappear, as we are reminded in our own country, for example, by the substitution for 'Humphry with his flail' of the threshing-machine, and of the equally unlovely steam-plough for the ploughman and his team. It is the same in far-off Palestine, where the water-wheel, with its team of mules, is being replaced by the oil-engine. Watching the former method of drawing water from the wells for irrigating the land was pleasant to the eye of an artist; but the work was laborious and costly. With an oil-engine of six-horse power it is possible to pump double the quantity of water previously raised by eight mules, while the expense is about the same. It is unfortunately a foregone conclusion that the picturesque must suffer when it becomes expensive to maintain.

A FORAGE FACTORY.

When railways first came to be established there were gloomy forebodings that horse traction would be altogether superseded; but it is now evident that the railways have had the effect of adding greatly to the number of vehicles which crowd our streets, and the railway companies themselves are among the largest employers of horse-labour. In order to feed their immense stud of horses,

the Great Eastern Railway Company have recently erected at Romford, Essex, a factory for the preparation of fodder. This factory is fitted with machinery of the most modern type, which deals with two classes of material—hay or clover and grain (oats, beans, and maize). The principal part of the plant is devoted to the treatment of the grain, which is weighed—half-a-ton at a time—and then passed through a series of sifters, which eliminate all foreign matters and impurities, the final operation being its submission to the magnetic separator, which takes up the particles of wire, nails, and screws always mixed with grain in astonishing quantity. Finally, the grain is crushed and then mixed with the chaff, which has previously been cut and otherwise prepared. There are in this unique factory separate sets of sifters and crushers for each kind of grain, and the materials can be mixed automatically in any proportions required. The entire machinery is driven by a powerful horizontal engine.

A COSTLY MAP.

Among the wonderful treasures which are gathered together at the Paris Exposition is a map which rivals in its intrinsic value the contents of many notable jewel-cases. It is a map of France, not printed or drawn like ordinary maps, but made up of the noble metals and studded with precious stones. The chief towns of France, to the number of one hundred and six, are represented by costly gems set in gold, Paris naturally taking the premier position with a fine rubellite. The colours of the mineral kingdom are as rich and diversified as those found in flowers, and thus it is not difficult, when expense is no object, to find in stones tints of all hues. In this unique map of France variety is secured by the employment of such minerals as the emerald, its paler sister the beryl, the sapphire, tourmaline, amethyst, chrysolite, chrysoberyl, and many more whose names are less familiar. In this wonderful map the rivers are made of platinum.

A WATERLESS FOUNTAIN.

Another novelty at the Paris Exposition which attracts much attention is a fountain which plays in the section known as 'Spain in the Time of the Moors.' The first intention was that this fountain should be of the ordinary character but of unusual size; difficulties, however, came in the way which seemed insuperable, and M. Trouvé, the engineer in charge, suggested a substitute for water which has proved to be a great success. The fountain is now a dry one, and it will be seen that the method adopted in its operation is only applicable to situations under cover. There is a jet tube, below which is a powerful electric fan and an arc lamp. This fan projects a jet of air through the tube, and the air carries with it a constantly supplied stream of rice-grains, mingled with spangles of metal foil and particles

of glittering mica, which sparkle with splendid effect in the beams of the arc lamp. The fountain basin is so arranged that the constituents of the glittering stream as they fall are constantly drawn within the influence of the electric fan, so that they do duty over and over again.

PROTECTION FROM CORROSION OF SHIPS' HULLS.

A German technical paper describes a new method of protecting a ship's hull from both corrosion and adhesion of marine growths, which constitute such a frequent cause of reduced speed. The great essential is a composition which will, besides affording certain protection, dry smoothly and rapidly. The process described is that of Rahtjen, and commences with the application of a coating of shellac in alcohol, with which is incorporated a little iron oxide, and some linseed-oil to furnish elasticity. A general coating follows of the same composition, to which has been added a mercuric salt, which under the action of the sea-water leads to the formation of corrosive sublimate. This poisonous coating is partly soluble, and to a certain extent wears away; but, while any mercury remains, the marine organisms which ordinarily cling to a ship's bottom are conspicuous only by their absence. Even when the poisonous coating altogether disappears, the hull is still protected from corrosion by the initial coat of shellac varnish.

LITHOGRAPHIC STONE.

In spite of the introduction of new methods of illustrating books, the lithographic process still holds its own for a variety of purposes in the printing-office; and it is a curious fact that a small region in and around the village of Solenhofen in Bavaria is the world's depot for the particular kind of stone employed in the process. There is no fear that the supply of stone from this source will be exhausted—at any rate, not for two hundred years to come. It is only the stone which comes up to a certain standard which is used for lithographic work, the rest being employed for building, and the best kind is the blue or gray variety. This kind is harder and will allow of more impressions being taken from it than stones of inferior quality; moreover, it can be worked from both sides, which is a necessity in the case of certain lithographic machines. The value of the annual yield of lithographic stones in this Bavarian quarry amounts to about one hundred and twenty thousand pounds.

AUTOMATIC BOOT-CLEANER.

A machine has been invented for cleaning boots automatically, and it should find favour in hotels and schools, where much muscular energy is at present expended in such work. The boots, on the feet or on lasts, are in turn inserted

into three separate openings, and revolving brushes clean off the mud, apply the blacking, and polish the boot. This machine will doubtless prove of service as long as existing conditions prevail; but surely the time will soon come when the laborious process of polishing foot-gear will be improved upon. It ought not to be beyond the efforts of an ingenious inventor to devise some simple fluid which will at once give a boot the necessary 'shine' without any polishing whatever. We believe that such compounds have already been made; but the suspicion that they have a deteriorating action on the leather of the boots retards their general adoption.

BLAST-FURNACE SLAG CEMENT.

At a recent meeting of the Iron and Steel Institute a paper was read by Ritter von Schwarz on the utilisation of blast-furnace slag as cement. In the process employed the slag is first of all reduced to the condition of sand, and after admixture with limestone and slaked lime it is ground to a fine powder. The next operation is to add a small proportion of water and form the mixture into bricks, which are air-dried and subsequently burnt in a kiln to clinker. After being stored for about six weeks this clinker is ground into fine powder, and can then be used as cement. This cement is of exceptional tensile strength, and will resist compression to a remarkable degree.

MEASURING A LIGHTNING-FLASH.

A German astronomer has been endeavouring to measure the width of a streak of lightning; and he tells us that the particular flash which allowed itself to be so measured proved to be about five millimetres—that is, one-fifth of an inch—across. There is no known method of obtaining such a result direct, and the calculator was forced to depend upon a photograph, which, curiously enough, included both a building and the flash that struck the building at the moment the lens was uncovered. This picture was taken from a window of the Hamburg Observatory; and as the distance of the building struck, together with the focal length of the lens, was known, it was not a difficult matter to arrive at the result given. It is not the first time that this experiment has been tried under much the same conditions and with a similar result. The German astronomer makes the assertion that a lightning-streak may be considerably widened by being acted upon laterally by a strong wind.

RAISED FROM THE SEA.

A novel method of making a new suburb to the city of New York is now in progress. The rapid growth of the population there has reduced the amount of available building-land to a minimum; and, in order to meet the requirements of the builders, new land is now literally being pumped

from the bed of the sea at the Nassau Beach, in Long Island, not far from Brooklyn. In order to carry out this work a powerful suction-dredger raises the submerged gravel at the rate of eighteen thousand cubic yards per day. This loose soil, pumped up through twelve-inch pipes with five times its bulk of water, is spread over the salt-marshes which abound on this coast, raising the land to six feet above high-water level. The water raised with the soil flows back to the sea by a circuitous route, and the solid matter gradually settles down into a compact mass fit for building-sites. The new suburb will be in direct communication with Brooklyn and New York by means of a handsome promenade and by an electric railway.

LEAD-POISONING IN THE POTTERIES.

Some time ago a great outcry was made with regard to the use of lead for glazing purposes in our potteries, it being alleged that the action of this metal was most prejudicial to the workpeople. By the action of the Home Office an inquiry into the matter was instituted; and Professor Thorpe, under whose auspices this inquiry was conducted, has recently given at the Royal Institution, London, a full account of what has been done, in the form of a lecture entitled 'Pottery and Plumbism.' The main results of the inquiry seem to be that lead glazes are very convenient in use, but that their advantages are purchased at the cost of much physical suffering to the operatives; that in Continental manufactories a form of metal known as 'fritted lead' is employed, and to its use may be traced the comparative freedom from lead-poisoning enjoyed by the greater number of foreign factories; that so long as lead compounds are employed complete immunity from plumbism can never be secured; and that such compounds can be dispensed with, for leadless glazes of great brilliancy, covering power, and durability, and adapted to all kinds of domestic and sanitary ware, are now within the reach of the manufacturer. The London School Board are showing a good example by inserting a clause in all specifications for new works strictly prohibiting the use of any pottery goods glazed by means of lead.

A PETRIFIED FOREST.

We have often read in the fascinating tales of the *Thousand and One Nights* of remarkable mountains of gold and valleys of precious stones containing wealth inexhaustible; but perhaps we have not even heard that there is in America a place which is peculiarly reminiscent of them. This is the petrified forest of Arizona, which, being the only one of its kind, can rightly be considered as a wonder. Locally, the forest is very appropriately named Chalcedony Park. For miles around the ground is covered with enormous logs petrified to the core, which lie where they fell centuries, perhaps ages, ago, and dazzle the

eye on a fine bright day with the most beautiful colours. Some resemble the amethyst, some smoky topaz, while others appear as pure and as white as alabaster. In places chips of the agate cover the ground to the depth of one foot, and it is easy to pick from them cross-sections showing distinctly every vein and even the bark of the original wood. One gigantic tree spanning a 'gulch' forty feet wide is undoubtedly the only bridge of agate in the world; and, though it has been in the same peculiar position for centuries, it is quite firm, and strong enough to endure for as long a period.

Naturally geologists have been speculating as to the reason why such a large area of forest became petrified. The most feasible theory is that the great plain, now five thousand feet above sea-level, was at one time covered by a forest, which was submerged in water strongly charged with minerals until the fibres of the trees were thoroughly soaked and transformed into agate. Even now there are many trunks packed in a deposit of fine clay, which, it is conjectured, was left by the receding waters; but the erosion of the wind has pulverised much of the clay and carried it away in the air.

It is scarcity, and not intrinsic worth, that enhances the value of precious stones; therefore it is quite obvious that, with almost an unlimited supply at hand, costing nothing but the labour of picking, the price agate can command will not be very high. Some of the finer specimens, when mounted by jewellers, are costly; but the greater quantity of the stone is converted into table-tops and similar articles, for which a smooth slab is necessary, and it is even used for building purposes. Indeed, a company has been formed in Denver for cutting and polishing the stone for architectural and decorative work; and more than one building in Denver is faced with agate. Not very long ago a motion was made in the United States Senate for a law to prohibit spoliation of the wonderful work of nature; but, strange to say, the motion was not adopted. Evidently the general utility of the stone was considered of more consequence than the mere aspect and uniqueness of the forest. However, time will tell; perhaps a century hence the petrified forest will be as extinct as the dodo.

MINE VENTILATION.

Piping made of sailcloth and impregnated with india-rubber is being manufactured by a Düsseldorf firm for use in mines for ventilation. These are said to be much cheaper than piping made of wood or zinc. The pipes are provided at intervals with steel rings to prevent them from kinking, and they are secured to the shafts and passages by means of galvanised iron rings. These cloth pipes can be easily handled and transported; and one great advantage in their employment, says the *Colliery Guardian*, is that when shots are

fired in the mine the cloth pipes can be folded together and put out of the way in a manner which would be impracticable were the tubes made of metal or wood.

THE 'LIGHT' TREATMENT FOR SKIN DISEASES.

In our recent article on the Finsen Institute it was indicated that there would soon be one on the same system in London. It is announced that a department has been opened at the London Hospital for the treatment of lupus and some other diseases of the skin by Professor Finsen's method of phototherapy, or 'light treatment.' This work is being carried on in connection with the department of diseases of the skin, and is superintended by the physicians in charge thereof, and under the immediate care of the special dermatological clinical assistant. The introduction of this method of treatment at the London Hospital—the first in Great Britain to adopt it—is due to Her Royal Highness the Princess of Wales, who has taken the greatest interest in it since she first saw it carried out in Copenhagen. Her Royal Highness presented the necessary and expensive apparatus required, being most anxious that its benefits should be extended to the poor of London. Nurses have been specially trained for the work at Copenhagen.

EVENING SONG OF THE BRETON FISHERMAN.

A SINGING breeze in the yellow sail,
Crisp white foam on the summer sea;
Sunset shadows and moonlight pale
On yonder haven, where I would be.
The toils of the day are over and past,
The fisherman comes to his rest at last!

The bells are ringing the vesper chime
In buried cities beneath the sea;
And the calm of the holy eventime
Has wrought its peace on the world and me.
Ave Maria! In mercy keep
The resting land and the restless deep.

The lighthouse flashes the beacon high,
A golden path on the dark'ning sea;
A star shines out in the dusky sky,
And faint lights glimmer along the quay.
And I know what the Star of Home is worth
When the heart of heaven beats close to earth.

E. E. OHLSON.

* * TO CONTRIBUTORS.

- 1st. All communications should be addressed 'To the Editor, 339 High Street, Edinburgh.'
- 2nd. For its return in case of ineligibility, postage-stamps should accompany every manuscript.
- 3rd. To secure their safe return if ineligible, ALL MANUSCRIPTS, whether accompanied by a letter of advice or otherwise, should have the writer's Name and Address written upon them in FULL.
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